

ABSTRACT

A method for generating the reflection of data in a plurality of processing elements comprises shifting the data along, for example, each row in the array until each processing element in the row has received all the data held by every other processing element in that row. Each processing element stores and outputs final data as a function of its position in the row. A similar reflection along a horizontal line can be achieved by shifting data along columns instead of rows. Also disclosed is a method for reflecting data in a matrix of processing elements about a vertical line comprising shifting data between processing elements arranged in rows. An initial count is set in each processing element according to the expression $(2 \times \text{Col_Index}) \times \text{Mod}(\text{array size})$. In one embodiment, a counter counts down from the initial count in each processing element as a function of the number of shifts that have been performed. Output is selected as a function of the current count. A similar reflection about a horizontal line can be achieved by shifting data between processing elements arranged in columns and setting the initial count according to the expression $(2 \times \text{Row_Index}) \times \text{Mod}(\text{array size})$. The present invention represents an efficient method for obtaining the reflection of data..